



ALBUQUERQUE ATARI COMPUTER ENTHUSIASTS

First Issue

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Dr. Troubleshooter

The following are excerpts from the April/May, 1991 issue of START magazine:

(Disk available through AACE Club Library)

Like any complex machine, computers break. Some problems are easy to fix -- a broken cable, a misunderstanding -- while some require an experienced technician. But which is which? This troubleshooting guide will tell you. Dr. Troubleshooter assembled a team of 10 experts to explain the simple fixes and tell you when you need that experienced help.

For ease of use, Dr. Troubleshooter split the guide into 10 areas of functionality. Happily, the 10 areas of functionality coincide with the 10 experts' areas of expertise. Each section is organized as follows: a statement or question summarizing the problem; its likely cause; a diagnosis, which is either an explanation of what went wrong or a way of confirming the cause; and a cure, a step-by-step fix of the problem.

Dr. Troubleshooter regrets that this guide is by no means comprehensive. To do such a thorough job would require several books. Luckily, Ralph C. Turner has written two books which answer hundreds of questions about the Atari ST, covering areas from beginner's confusion about GEM

to experienced user's tricks with complex software. The Atari ST Book and Intermediate and Advanced Atari ST Subjects are available from Index Legalis Publishing Company, P. O. Box 1822-3, Fairfield, IA, 52556, (515) 472-2293.

And last, but not least, at the advice of Mr. Lawyer, Dr. Troubleshooter presents the following disclaimers and caveats.

Number 1: Opening up hardware to perform your own repairs may violate your warranty. Check with the manufacturer before you remove the cover.

Number 2: Undertake any repairs at your own risk. You, and you alone, are responsible for the results, good or bad, of any testing, tweaking, poking, soldering, reseating, replacing or repairing that you perform. Dr. Troubleshooter, the 10 experts, the authors and START magazine make no warranties either express or implied with respect to this troubleshooting guide, its quality, accuracy, merchantability or fitness for any particular purpose.

Number 3: If you don't know what you're doing, ask for help. Your Atari dealer, product manufacturers, user groups and the online services are excellent resources. Use them.

Number 4: There is no ongoing support for this troubleshooting guide. Do not write or call with your particular problem. Dr. Troubleshooter, the 10 experts, the authors and START magazine cannot and will not diagnose or attempt to fix your problem over the telephone or through the mail. If you

can't figure out what's wrong, call the manufacturer or take the broken product to an authorized Atari repair shop.

The above mentioned disclaimer also applies to the AACE club and The publishers of this news letter.

ASK DR. DESKTOP

Why, when I try to run a certain program, do I only get an alert box that says "TOS Error #35"?

CAUSE The program you are trying to run is not executable on the ST. "TOS Error #35" is the ST's way of telling you that it doesn't understand what's contained in the file.

DIAGNOSIS There can be a number of reasons for this. If you downloaded the file from a bulletin board, it could have either been corrupted during the transfer or, more likely, wasn't meant for the ST. If the file has been around a while, on either a floppy or a hard disk, there is a small chance that the disk has been scrambled.

Also, maybe the disk and file are fine, and the file's contents are not a program. Sometimes a random file may accidentally be renamed as a program (.PRG, .APP, .TOS, or .TTP files), and the ST will respond with "TOS Error #35" when you attempt to execute it.

CURE Unfortunately, if the file is corrupted, you've got one shot at fixing it. Disk Doctor, from Antic Software, has an option to try to fix a damaged file. It only works on files whose "table of contents" is scrambled; if the actual file is corrupted, it cannot reconstruct it. If the latter is the case, better bring out your backup. Disk Doctor is

in the TOOLS folder on your START disk, in the ARCed file DSKDRARC.PRG.

In the case of the misnamed file, change its extension to .TXT (use the Show Info... option under the File menu) and double-click on it. If the contents appear as normal, readable text, then it's a data file, not a program file.

How come there are only six desk accessories available when I use my ST, even though I have 15 or so in the root folder of my boot disk?

CAUSE GEM, the ST's user interface, limits the number of desk accessories at one time, CodeHead Software sells a program called MultiDesk that loads a potentially infinite number of DAs at one time, the amount of memory in your computer being the only limiting factor.

If you would like to be able to choose which six DAs load up each time you use your computer, there are a number of programs that allow you to do that, most in the public domain. Desk Manager 2, HAZEL, and a host of others are available from BBSs and users groups. HAZEL is available on this month's START disk, in the ARCed file HAZELARC.PRG, in the TOOLS folder.

Why does my computer always boot up in low resolution with the default colors even though I changed the settings the last time I used it?

CAUSE You didn't save the changes you made before turning off the computer.

DIAGNOSIS AND CURE To save the changes you have made to your desktop, you need to use the Save Desktop entry in the Options menu. This will write your configuration to disk, in a file named

DESKTOP.INF, so it can be automatically reloaded the next time you boot up. Also, you should remember that if you want the options you set in your Control Panel to be restored (colors, double-click speed, etc.), the Control Panel must be present. Even if you saved changed colors, for instance, they will be reloaded only if CONTROL.ACC is in your boot folder.

If you have an STE computer, you may find that the computer boots in low resolution even though you have saved the Desktop in medium resolution. This is a bug with TOS 1.6. There is a patch program, STE_FIX.PRG, that fixes this problem. STE_FIX.PRG is on your START disk, in the ARCed file STEFXARC.PRG, in the TOOLS folder.

My computer is acting oddly. Some programs that have worked in the past don't anymore.

CAUSE There could be several reasons: you have a TSR conflict, you have a corrupted file, or you have a virus.

DIAGNOSIS Dr. Desktop covers viruses and corrupted files in other questions.

The most common reason for programs to stop working is TSR conflicts. A TSR is a terminate-and-stay-resident program, designed to stay in memory and wait for you to use it, like desk accessories and certain programs from your AUTO folder. If you started having trouble after adding a new program to your start-up disk, try removing that program and see if the situation goes back to normal. If it does, then the new program is the culprit.

CURE There are a number of things you can do to avoid TSR conflicts. The CodeHead program AUTO_ORG.PRG reorganizes the order of the files in your AUTO folder, and that will often remove some conflicts. A few programs need to be

run before everything else, or they will heedlessly trample over whatever is in their way. Check the program's documentation. The only way to determine a workable TSR order is through trial and error. Delete everything from your AUTO folder (copy it to another disk first!), then add TSRs one at a time, rebooting each time to test them. If conflicts appear, reorganize them until they stop clashing. Continue until you replace all your TSRs in the AUTO folder.

Some TSRs are sworn enemies; they will not work with one another, no matter what. In that case, get Desk Manager 2, HAZEL, or any other start-up file chooser and simply remove the offending TSR each time you are going to use its enemy.

Every time I try to run a certain program, the computer tells me that I don't have enough memory.

CAUSE Either the program requires more memory than you have available (for example, some START programs will only run on an 1MB machine; you're out of luck if you have an unmodified 520ST), or your desk accessories and TSRs are eating more memory than you realize.

DIAGNOSIS AND CURE Check your program's documentation for the minimum amount of memory required to run it. If you suspect your desk accessories and/or TSRs are interfering, remove some or all of them and reboot before using that program. By definition, DAs and TSRs grab memory (sometimes huge chunks, more than you may realize) at boot time and keep it for their sole use until you turn off your machine. If you are having memory troubles often, however, the best solution is to upgrade your RAM.

What do those bombs that appear on the screen mean? Is the computer broken?

CAUSE No. Bombs are just the computer's cute way of telling you that it's had a crash that it couldn't recover from, also known as a fatal error.

DIAGNOSIS Bombs usually result from garbled machine language (a bug in a program, or your ST burping for no apparent reason) or conflicting TSRs. The number of bombs tells you what type of fatal error the problem was -- important information to the programmer, but not much help to the user.

If bombs happen regularly at boot up, you may have conflicted TSRs, or possibly a bad chip.

CURE Rebooting the computer and starting over is, unfortunately, the only solution. If bombs happen regularly at boot up, try the cure for conflicting TSRs. If that doesn't stop it, suspect a bad chip and take your computer to a repair shop.

After using my computer for a while, I suddenly start to get scrambled file listings. The problem goes away if I reboot. What's going on?

CAUSE You have encountered the infamous 40-Folder Bug.

DIAGNOSIS Because of a mistake in the early versions of TOS, any time you try to access more than 40 folders in one computing session, the computer will get confused and start returning garbage in windows.

CURE The solution is simple. On this month's START disk you'll find a public-domain AUTO program, called FOLDRxxx.PRg, that will raise this limit to whatever you wish -- just substitute the number of additional folders you want for the "xxx" in the filename. One hundred is safe for the vast majority of people.

I just accidentally deleted an important file.

CAUSE You weren't paying attention to the confirmation box, or you don't have the Confirm Delete option active.

DIAGNOSIS On the Desktop, under the Options menu, choose the Set Preferences entry. Along with resolution, you're asked to choose whether you want a confirmation box to appear before the ST performs any file overwrites, copying or deletions. The Yes option should be highlighted.

CURE If you want your preference for Confirm Delete to be available the next time you boot, highlight the Yes choice, exit the menu and save your Desktop.

In order to recover the file you accidentally deleted, use the recover file option in Disk Doctor, which is on your START disk in the TOOLS folder. It only works under specific conditions. If you have written to the disk since deleting the file, its contents have probably been destroyed, leaving it unrecoverable. The best remedy against accidental file deletion is a consistent back-up schedule.

When I try to erase a certain file, the computer tells me, "An item with this name already exists in the directory, or this item is set to Read Only status."

CAUSE The file is write-protected, preventing it from being deleted or changed.

DIAGNOSIS Click on the program to highlight it, then choose Show Info... from the File menu. In the Show Info dialog, you should see that Read Only is highlighted.

CURE Click on Read/Write, then OK. The file can now be modified or trashed.

What can I do to prevent a virus infection?

CAUSE Viruses live on the boot sector of a floppy disk. If you boot your computer from an infected disk, the virus program is loaded into memory, then run. The virus watches for any disk access, and if it finds a disk that isn't write-protected, it copies itself onto that disk. It stays active until the computer is turned off. After a certain amount of time, a certain amount of copies, or if a certain disk is placed in the drive (a "key" disk), the virus is triggered to do its irritating, or even dangerous, dirty work.

DIAGNOSIS If your mouse suddenly changes direction, if a strange message appears on your Desktop, if part of your screen turns upside-down, you have a virus. Some viruses are known to mimic a hardware problem, such as a jittery screen, apparently trying to fool the user into taking his machine to the repair shop. A worse case scenario; the virus erases a disk, or formats your hard drive.

CURE If you suspect that you've been infected by a virus, use George Woodside's Vkiller program to test all your disks. Vkiller, which detects viruses and erases them, appeared in the May 1990 START. To get the latest version, check with your user group, or download it from CompuServe or GENie.

PREVENTION Never boot your computer with an "unknown" disk. Make a virus-free boot disk, and use it to boot every time. To make a virus-free boot disk, turn your computer off, and leave it off for at least 30 seconds. This is important! It takes a while for memory to be completely cleared, and you want to make sure that any virus in memory is erased. Now remove any disks from your drives, and turn off your hard drive, if you have one. Turn on your ST. Since there isn't a disk in the drive, it will take a while for the system to boot. When

the Desktop finally appears, insert a new disk -- one fresh from the manufacturer -- then format it. From virus free disks, copy any AUTO folder programs or accessories to the disk, then physically write-protect the disk so that no other information, such as a virus, can be written to it. Now, as long as you boot from this disk, a virus cannot infect your ST and spread to other disks. Also, if you forget and boot from another disk and get infected, the virus cannot infect your boot disk because it's write-protected.

The protection scheme described above only works if you have TOS in ROM. If you have TOS on disk, now is a good time to upgrade. Talk to your Atari dealer about buying TOS on ROM.

Once you're virus-free, use Vkiller to stay that way. Test any questionable disk before you put it in your machine. By questionable, Dr. Desktop means any disk that's ever touched the lips of someone else's floppy drive. Computer viruses, like human ones, strike indiscriminately; you can get one from your best friend as easily as from a stranger.

ASK DR. KEYBOARD

One specific key on my keyboard doesn't work.

CAUSE You've got either an up problem or a down problem. The down problem is when the plunger underneath the cap of the key, the thing that is pushed down to close the contact, breaks. The up problem is when the small rubber cup (on the 520 and 1040 keyboard) or the spring (on the Megas) that pushes the plunger back up shifts to where it can't do its job.

DIAGNOSIS If the key won't return after it has been pressed, or won't go down in the first place, you've got an up problem. If the key falls off the keyboard, you have a down problem.

CURE If you can salvage the pieces of the plunger, gluing them back together will solve the down problem. Salvaging the pieces of the plunger means disassembling the keyboard unit. This procedure, however, is not easy. It's not a problem to take the cover off the computer. (Be sure to unscrew only the screws near the edge of the middle of the ST which hold the floppy drive in place.) The keyboard lifts out. Now you need to unscrew the back cover of the keyboard unit; dozens of springs, or cups, pop out. After you've put them back in place, getting them to stay there while you replace the keyboard unit's cover is a pain.

If you have an up problem, you need to realign the cup or spring that pushes up the key's plunger. Again, with appropriate warnings given above, disassemble the keyboard. Since every cup, or spring, will pop out, just make sure you replace them correctly.

A service center can fix either problem, but they may want to replace the entire keyboard, just to keep the job simple. Ask what it will cost before handing over your ST.

A whole section of my keyboard doesn't work.

CAUSE Computers that take a lot of abuse sometimes develop cracks in the circuit board's wiring.

DIAGNOSIS Since the keyboard's wiring is laid out like a matrix, usually one wire will carry signals to and from a group of keys. Make sure the non-functioning keys are grouped together. If they're scattered about the keyboard, you have multiple occurrences of the problem discussed above.

CURE The only solution, because the crack is in a lead along a printed circuit, is to have the keyboard replaced.

My whole keyboard is dead.

CAUSE One or both of the keyboard chips is bad.

DIAGNOSIS There is one chip on the keyboard unit which sends signals to another chip on the ST motherboard via a ribbon cable. To figure out which chip is bad, borrow a friend's keyboard unit and plug it into your motherboard. If your friend's keyboard works, suspect the keyboard unit chip. The motherboard chip also handles input from the mouse and joystick. If these peripherals, as well as your keyboard, aren't working, then suspect the motherboard chip.

CURE Keyboard chips are custom made, so only Atari and some Atari repair shops stock them. Once you get one, it's easy to replace. The chip is socketed onto the bottom of the keyboard unit; you don't need to open it up and experience the flying caps or springs. Simply pry out the bad one and plug in the new one.

It's not as easy to replace the keyboard chip on the motherboard. The chip is a Motorola 6850, available at well-stocked electronics stores. It is soldered to the motherboard, and there are two of them. One 6850 receives keyboard signals; the other controls the MIDI ports. You need to either read the ST's schematic or trace the wiring to figure out which is the right 6850. Then you must remove the bad chip and solder in the new one. If you have no experience soldering, this isn't the time to learn. Take your computer to a dealer.

ASK DR. FLOPPY DRIVE

I keep getting the error message that my drive "is not responding." What's wrong?

CAUSE It could be anything. Specifically,

it could be a bad disk, a bad cable, a bad drive, a bad power supply, or a bad floppy-disk controller in your ST. You also could be attempting to read a double-sided disk with a single-sided floppy drive.

DIAGNOSIS First, make sure that the drive access light comes on when you try to read the disk. If it doesn't, make sure that the drive has power, and that it's turned on. If all the connections are in place, your power supply may be dead.

If the access light does come on, try reading another disk. If it works, then your original disk is bad. If it doesn't, try yet another disk (in case the second disk is bad, too). If the drive refuses to read any disks, test the cable which connects your drive to the ST. Make sure it's plugged in! Try replacing the cable with a friend's good cable. If the cable is OK, then the problem is with the drive or the computer. Borrow a friend's drive and connect it to your ST. If it works, your drive is broken. If it doesn't work, suspect your ST.

Before you take your machine into a dealer for repair, make sure you aren't trying to read a double-sided disk with a single-sided drive. During their first years of manufacture (1985 and 1986), Atari sold both 520STs and 1040STs with internal single-sided drives. Megas have always carried double-sided drives. Atari also sold an external single-sided drive, called the SF354. To the best of our knowledge, no third-party vendors sold single-sided drives during that period. Check what kind of drive you own by trying to read a single-sided disk (357,376 bytes) and a double-sided disk (726,016 bytes). The Show Info...option under the File menu will give you disk size.

CURE If it's a bad disk, hopefully you've got a backup copy somewhere. For a bad cable, buy another cable from your Atari dealer. If the drive access light refuses to come on, and you can't hear the motor spin,

then your drive's power supply needs replacing, or the power switch is broken. If the drive is still under warranty, follow the warranty instructions. Otherwise, get your local dealer to fix it. Many times, "fixing" a disk drive simply involves replacing the broken drive mechanism with a new one, so you end up with a new drive in an old case. If your ST seems to be the culprit (or if you have an internal disk drive that won't work), you'll also need to see your authorized Atari dealer.

If you're trying to read a double-sided disk with a single-sided drive, you have two options. You can buy a double-sided drive, or you can convert the double-sided disk to single-sided. Most manufacturers of commercial disks will exchange double-sided ones for single-sided. Alternately, you can get a friend with a double-sided drive to copy the files onto two single-sided disks.

I've tried chaining three disk drives to my ST. The first drive works fine, but not the second or third.

CAUSE The ST can access only two floppy drives. When you chain a third drive to your computer, it tries to access it whenever you access the second drive, and vice versa. Very confusing.

DIAGNOSIS AND CURE Remove the third drive; the second drive should now work fine.

Sometimes I get "garbage" on the Desktop window when I open a disk.

CAUSE Most likely, a worn-out disk. Another possibility is a dirty or worn read/write head.

DIAGNOSIS If it's just a certain disk that sometimes gives you garbage characters, then the magnetic coating on that disk may be wearing thin. If this seems to happen no

matter what disk you use, the read/write head on the drive is dirty or worn out, or a piece of hair or other debris is interfering with the head.

CURE If it's a worn disk, you'd better copy it right now! Eventually, the magnetic coating will fail altogether, and the information on that disk will be lost.

For a dirty read/write head, purchase a 3.5-inch disk-drive cleaning kit and follow the instructions to clean the drive. If the problem persists, then the head may be worn out, and it will need to be replaced. Don't try to replace it yourself unless you know -- really know -- what you're doing. Drive heads need to be precisely aligned in order to work correctly. If you suspect a worn head, it's time for a trip to your Atari service shop.

When I try to save something, I get a message that the disk "is physically write protected."

CAUSE The disk is write-protected.

DIAGNOSIS Write protection prevents data on a disk from being accidentally erased or overwritten. If the sliding tab on the upper left corner is open, so that the hole is uncovered, then the disk is write-protected and cannot be written to or formatted.

CURE Slide the tab down so that the hole is covered. The disk is now unprotected.

My drive won't read disks from my friend's ST, yet it reads my disks fine.

CAUSE Either your drive or your friend's drive is spinning at the wrong speed. ST drives should spin at a rate of 300 rpm. If a disk was formatted at a slower or faster speed, a drive operating at the correct speed may not read it, and vice versa.

DIAGNOSIS All commercial, mass-produced disks are made at 300 rpm, so see if your drive has any problems reading the original disks from one of your commercial programs. If it reads the disk, then your drive is okay, but your friend's isn't. Use the program **SPEED.PR**G to test your drive. You'll find it on your **START** disk, in the **ARCed** file **SPEEDARC.PR**G, in the **TOOLS** folder.

CURE The drive's speed can be adjusted by your dealer.

To be continued

We hope that the readers of this, the first edition of the **AACE** newsletter, will find the articles and information helpful. We welcome club member submissions and hope that in the future we can include different departments which will provide informative and helpful information for **ATARI** users with various needs and interests.

Contributors to this edition are:

Vince Giangrossi of Belen who designed the Logo / Masthead.

Richard Houser of Albuquerque who gathered all of the information for this edition and directed its format.

Bruce and Mary Kay Archer of Los Lunas who published the main portion using **Page Stream 2.2**.